Poster Abstract for
Environmental Public Health Tracking Workshop
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Title: Examining Geographic and Temporal Patterns of Cancer Incidence in New Jersey

Keywords: *cancer, environmental health, tracking, surveillance*

Background: Environmental factors are believed to play an important role in the etiology of many cancers. This demonstration project will evaluate the geographic and temporal relationships among incident cases of selected cancers and specific environmental hazards or exposures.

Objectives: Identify appropriate cancer types or sites for analysis; and examine spatial and temporal variation in cancer incidence, using geographic information systems (GIS) and appropriate statistical analyses. Cancers with interesting time trends or strong geographic clustering will be utilized to link data on cancer incidence and environmental factors.

Methods: Cancers for analysis were identified based on epidemiologic evidence that environmental factors play an etiologic role; consideration of possible human exposure to potentially causative environmental factors; and sufficient number of cancer cases to allow for analysis. Annual sex-specific, age-adjusted statewide rates for each cancer were examined for temporal trends for 1979 through 2001. Geographic patterns were examined using sex-specific incidence data at the census tract level. Cluster analysis was conducted using SaTScan.

Results: Six cancers were selected for geographic analysis: mesothelioma; thyroid; leukemia; bone and joint; brain and central nervous system; and bladder. Thyroid cancer incidence increased substantially during the study period, especially among females. No time trends were apparent in the other cancers. Mesothelioma showed strong geographic clustering around locations where historical industrial use of asbestos is known. Geographic analyses of other cancers are ongoing.

Conclusions: Temporal and geographic patterns were observed in the incidence of specific cancers that may be of interest for environmental linkage studies. NJDHSS and NJDEP will continue to work together to explore the utility of linking existing cancer data and environmental hazard datasets for public health surveillance.

Evaluation: Intra-agency and interagency cooperation have been determined to be key elements for successful implementation of environmental public health tracking activities.

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